

CLAIMS

1. An apparatus for preventing leakage of a material inside a bulb for a plasma lighting system, comprising:
 - 5 a bulb containing a discharge material therein for emitting light as the discharge material becomes a plasma state by an electric field; and a magnetic field forming portion for preventing the discharge material of a plasma state from being leaked by an external electric field of the bulb by forming a magnetic field at a peripheral portion of the bulb.
- 10 2. The apparatus of claim 1, wherein the magnetic field forming portion forms a magnetic field as a wedge shape so that the discharge material be positioned at a center of the bulb.
- 15 3. The apparatus of claim 1, wherein the discharge material comprises sodium (Na).
4. The apparatus of claim 2, wherein the discharge material comprises Na.
- 20 5. An apparatus for preventing leakage of a material inside a bulb for a plasma lighting system, comprising:
 - a resonator;
 - a bulb received in the resonator and containing a discharge material

therein for emitting light as the discharge material becomes a plasma state by an electric field; and

a magnetic field forming portion for preventing the discharge material of a plasma state from being leaked by an external electric field of the bulb by
5 forming a magnetic field at a peripheral portion of the bulb.

6. The apparatus of claim 5, wherein the magnetic field forming portion forms a magnetic field as a wedge shape so that the discharge material be positioned at a center of the bulb.

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7. The apparatus of claim 6, wherein the magnetic field forming portion is implemented as an electromagnet.

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8. The apparatus of claim 6, wherein the magnetic field forming portion is implemented as a permanent magnet.

9. The apparatus of claim 5, wherein the discharge material comprises Na.

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10. The apparatus of claim 6, wherein the discharge material comprises Na.

11. An apparatus for preventing leakage of a material inside a bulb for a plasma lighting system, comprising:

a casing;

a magnetron mounted in the casing;

a wave guide connected to the magnetron for guiding electromagnetic wave;

5 a resonator connected to the wave guide for resonating electromagnetic wave;

a bulb received in the resonator and containing a discharge material therein for emitting light as the discharge material becomes a plasma state by an electric field; and

10 a magnetic field forming portion for preventing the discharge material of a plasma state from being leaked by an external electric field of the bulb by forming a magnetic field at a peripheral portion of the bulb.

12. The apparatus of claim 11, wherein the magnetic field forming portion forms a magnetic field as a wedge shape so that the discharge material be positioned at a center of the bulb.

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13. The apparatus of claim 12, wherein the magnetic field forming portion is implemented as an electromagnet.

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14. The apparatus of claim 12, wherein a reflector having the resonator therein for forwardly reflecting light generated from the bulb is installed at a front side of the casing.

15. The apparatus of claim 14, wherein the magnetic field forming portion is installed accordingly as the electromagnet is mounted in a housing and the housing is positioned at an outer circumferential surface of the reflector.

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16. The apparatus of claim 12, wherein the magnetic field forming portion is installed accordingly as the electromagnet is mounted in a housing and the housing is coupled to the casing.

10 17. The apparatus of claim 12, wherein the magnetic field forming portion is implemented as a permanent magnet.

18. The apparatus of claim 17, wherein the permanent magnet is attached to an outer circumferential surface of the casing.

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19. The apparatus of claim 11, wherein the discharge material comprises Na.

20. The apparatus of claim 12, wherein the discharge material comprises Na.